

Notice of Allowability

Application No.

10/763,244

Examiner

Trung Dang

Applicant(s)

KUBOTA ET AL.

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response after final filed 8/16/06.
2. ☒ The allowed claim(s) is/are 5,11,12 and 14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Trung Dang
Primary Examiner
Art Unit: 2823

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance:

Applicants' arguments with respect to Chang (US Pat. 6,566,224) in the response after final filed 8/16/06 is persuasive. Particularly, although Chang discloses an oxidation atmosphere containing 99% oxygen and 1% dichloroethylene (DCE), it is unclear as whether such disclosed percentages are by weight or by volume because it is known in the related art that the concentrations of oxygen and DCE can be also expressed by volume.

The Chinese reference of record (CN 1392604A) discloses trans-dichloroethylene having a concentration within a range of 0.5% to 5.0% by weight and a temperature in a range of 900-1150°C. Independent claim 1 and 11 of the pending application each recites a concentration of DCE within a range of 0.45% to 1.97% by weight and a temperature in a range of 850-950°C. Although the disclosed trans-dichloroethylene reads on the claimed DCE and there are some overlap between the disclosed ranges and the claimed ranges, the Chinese reference fails to teach the claimed limitations regarding a) the thickness of an oxide film at a corner portion of the semiconductor region adjacent to the upper end portion of the trench is greater than a thickness of said oxide film at other portions of the trench, and b) a stress imposed on the upper corner portion of the trench to less than 100 MPa. It is noted that the process of the Chinese reference results in a thin oxide layer 114 having a thickness that is

substantially the same everywhere along the walls of the trench as shown in Figs. 3 and 4. Thus, it is unobvious as to why one of ordinary skill in the art would be motivated to combine with the Chinese reference because such combination would result in a trench oxide liner having the same thickness.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Trung Dang', with a stylized, cursive script.

Trung Dang
Primary Examiner
Art Unit 2823

8/20/06